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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/620,595	07/20/2000	Takanobu Takeuchi	194630US2	3689
22850	7590	07/25/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			LAO, LUN S	
			ART UNIT	PAPER NUMBER
			2644	

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/620,595

**Applicant(s)**

TAKEUCHI, TAKANOBU

**Examiner**

Lun-See Lao

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### *Introduction*

1. The request filed on 04-06-2005 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/620,595 is acceptable and a CPA has been established. An action on the CPA follows.
2. This action responds to the amendment filed on 04-06-2005. Claims 1,2 and 5 have been amended and claims 7-15 have been withdrawn. Claims 1-6 are pending.

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-6 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,516,069. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Consider claim 1 substantially all the claimed steps were claimed in the patent identified above, such as the steps of : " a microphone unit comprising:

an electret capacitor having first and second electrodes;

a transistor amplifier with which voltage generated between said first and second electrodes of said electret capacitor is amplified and then outputted to an output of the microphone unit; and

at least one operational amplifier connected to the transistor amplifier and receiving the amplified voltage; and

an external capacitor having,

a first electrode to which the amplified voltage from said transistor amplifier is applied through the at least one operational amplifier, and a second electrode connected to said first electrode of said electret capacitor off ground" (see US PAT. 6,516,069 claim 2, lines 15-39).

The difference between the current claims and the patent is that the environments wherein the claimed microphone unit is used the use of the claimed microphone unit.

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The current application involve a microphone unit with operational amplifier and transistor and the patent involves transistor.

However, Both microphone units are involving an operation or turning of transistor. This microphone unit is meant to use with transistor and operational amplifier. Although the environment (one is microphone unit formed in a semiconductor chip, the other one is microphone unit in a circuitry) is different, but they both involve transistor and capacitor. Therefore, using this microphone unit in these two environments would have been obvious for one of ordinary skill in the art because even the environment changes, the operation of the microphone unit remains substantially unchanged.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boeckmann (US PAT 4,518,829).

Consider claim 1 Boeckmann teaches an electret (see fig.1, M1) capacitor having first and second electrodes;

a transistor amplifier (Q1) with which voltage generated between said first and second electrodes of said electret capacitor (M1) is amplified and then outputted to an output of the microphone unit (M1); and

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at least one amplifier (100) connected to the transistor amplifier (Q1) and receiving the amplified voltage; and

an external capacitor (C1) having a first electrode to which the amplified voltage from said transistor amplifier (Q1) is applied through the at least one amplifier (100), and a second electrode connected to said first electrode of said electret capacitor off ground (see col.2 line 66-col.3 line 39), but Boeckmann does not clearly teach an operational amplifier in the circuit, on the other hand, Boeckman indicated that amplifier may be any number of different types of the amplifier depending on the amplification requirement (see col. 3 lines 15-19), and an operational amplifier is well known in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made the invention of Boeckmann that an operational amplifier could have been used in the circuit as claimed for the purpose of acquiring the desired microphone sound quality for the market demand.

7. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boeckmann (US PAT 4,518,829) in view of Papadopoulos (US PAT. 6,580,797).

Consider claim 2 Boeckmann teaches the microphone unit of the transistor amplifier comprises:

a first transistor (see fig.1, Q1) having a first current electrode, a second current electrode (M1) connected to said second electrode of said electret capacitor (M1), and a control electrode connected to said first electrode of said electret capacitor; a current source connected to said first current electrode of said first transistor (Q1) (see col.2 line 66-col.3 line 39); but Boeckmann fails to teach that the at least one operational

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amplifier comprises an inverting amplifier having an input terminal connected to said first current electrode of said first transistor.

However, Papadopoulos teaches the microphone unit of the transistor amplifier comprises:

a first transistor (see fig.1, Q1) having a first current electrode, a second current electrode (C1) connected to said second electrode of said electret capacitor (C1), and a control electrode connected to said first electrode of said electret capacitor; a current source connected to said first current electrode of said first transistor (Q1), wherein the at least one operational amplifier comprises an inverting amplifier (such as Q2 basic replace by a inverting operation amplifier and see col. 7 line 23-33) having an input terminal connected to said first current electrode of said first transistor (Q1 and see col.2 line 34-col.3 line 63).

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Papadopoulos into Boeckmann to provide a circuit for connecting an electret microphone to audio input and providing audio signal to the inputs for reducing unwanted microphone sensitivity at selected frequencies.

Consider claim 5, Papadopoulos teaches that the operational amplifier (see fig.1, Q2 and see col. 7 line 23-33) further comprises a voltage follower having an input terminal connected to said first current electrode of said first transistor (Q1), and an output terminal connected to said input terminal of said inverting amplifier (such as Q2

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basic replace by a inverting operation amplifier and see col. 7 line 23-33 and col. 2 line 34-col.3 line 63).

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boeckmann (US PAT 4,518,829) as modified by Popadopoulos (US PAT. 6,580,797) as applied to claims 1-2 above, and further in view of Weber (US PAT 4,491,972).

Consider claim 3, Boeckmann teaches that the amplifier comprises:

a first resistor (see fig.1, R3) having a first terminal connected to said first current electrode of said first transistor (Q1, (amplifier)), and a second terminal; but Boeckmann fails to teach first operational amplifier having a negative input terminal connected to said second terminal of said first resistor, a positive input terminal to which a first fixed potential is applied, and an output terminal; and a second resistor having a first terminal connected to said negative input terminal of said first operational amplifier, and a second terminal connected to said output terminal of said first operational amplifier.

However, Weber teaches first operational amplifier(see fig.1,160) having a negative input terminal connected to said second terminal of said first resistor (162), a positive input terminal to which a first fixed potential (+V) is applied, and an output terminal (see col.3 lines 17-43); and

a second resistor (161) having a first terminal connected to said negative input terminal of said first operational amplifier (160), and a second terminal connected to said output terminal of said first operational amplifier (160 and see col.3 lines 17-43).



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Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Weber into the teaching of Boeckmann and Papadopoulos to have an improved audio signal in the microphone unit.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boeckmann (US PAT 4,518,829) as modified by Papadopoulos (US PAT. 6,580,797) as applied to claims 1-2 above, and further in view of Takada (US PAT 4,255,716).

Consider claim 4 Seligson and Papadopoulos do not clearly teach the microphone unit of current source comprises:

a second transistor having a first current electrode to which a first fixed potential is applied, a second current electrode connected to said first current electrode of said first transistor, and a control electrode to which a second fixed potential is applied.

However, Takada teaches the microphone unit of current source is a second transistor (see fig.2, 24) having a first current electrode to which a second fixed potential (-Vcc) is applied, a second current electrode connected to said first current electrode of said first transistor (23), and a control electrode to which a second fixed potential (ground) is applied (see col.2 line 29-57).

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Takada into the teaching of Boeckmann and Papadopoulos to provide an automatic gain control circuit the output signal of which is small in distortion (see (716) col.1 lines 49-52).

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10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boeckmann (US PAT 4,518,829) as modified by Papadopoulos (US PAT. 6,580,797) as applied to claims 1-2 above, and further in view of Akino (US PAT 6,453,048).

Consider claim 6 Boeckmann and Papadopoulos do not clearly teach the microphone unit of further comprising:

- a first diode having a cathode and an anode connected to say first and second electrodes of said electret capacitor, respectively;

- a second diode having an anode and a cathode connected to said first and second electrodes of said electret capacitor, respectively; and

- a third resistor connected in parallel with said electret capacitor.

However, Akino teaches the microphone unit of further comprising:

- a first diode (see fig.1,1A) having a cathode and an anode connected to said first and second electrodes of said electret capacitor (102), respectively;

- a second diode (1B) having an anode and a cathode connected to said first and second electrodes of said electret capacitor (102), respectively; and

- a third resistor (1C,3) connected in parallel with said electret capacitor (102 and see col.4 line 55-col.5 line 20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Akino into the teaching of Boeckmann and Papadopoulos to have improving an impedance converter for a condenser microphone, in which an input voice signal from a condenser microphone portion through an input terminal can be impressed at a sufficient impedance to a grid of

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an amplifier tube with a mutual conductance and a sufficient voice signal can be taken out of a plate without a ham noise affected from a cathode (see (048) col. 2 lines 55-63).

***Response to Amendment***

11. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any response to this action should be mailed to:

Mail Stop \_\_\_\_ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents  
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Alexandria, VA 22313-1450

Facsimile responses should be faxed to:  
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Hand-delivered responses should be brought to:  
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Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian, can be reached on (571) 272-7848.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao, Lun-See  
Patent Examiner  
US Patent and Trademark Office  
Knox  
571-272-7501  
Date 07-15-2005



VIVIAN CHIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600